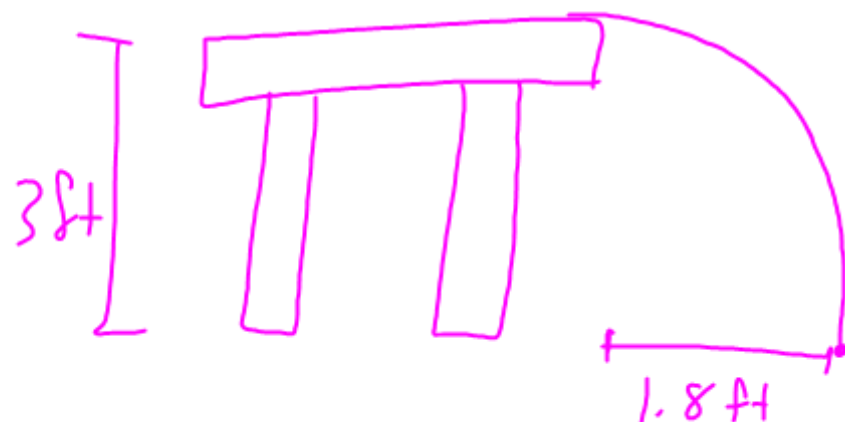


⑦



$$t \Rightarrow 0 = -16t^2 + 3$$

$$t = \sqrt{\frac{-3}{-16}} \approx 0.43 \text{ sec.}$$

$$x = rt$$

$$y = -16t^2 + 3$$

dist

$$x = rt$$

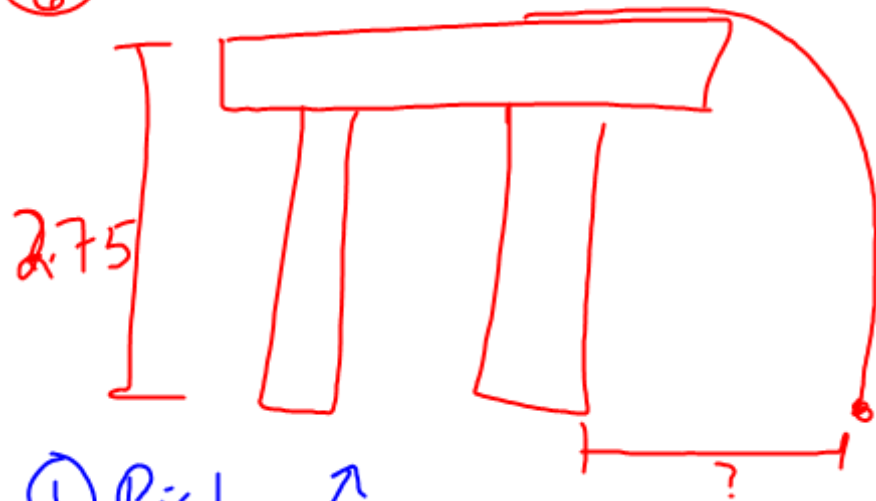
$$\downarrow$$

$$1.8 = r(0.43)$$

$$\frac{1.8}{0.43} = \frac{r(0.43)}{0.43}$$

$$r = 4.16 \text{ ft/sec}$$

①



① Pic. ↑

6.5

$$x = 1.5t$$

$$y = -16t^2 + 2.75$$

②  $E_2$  ↑

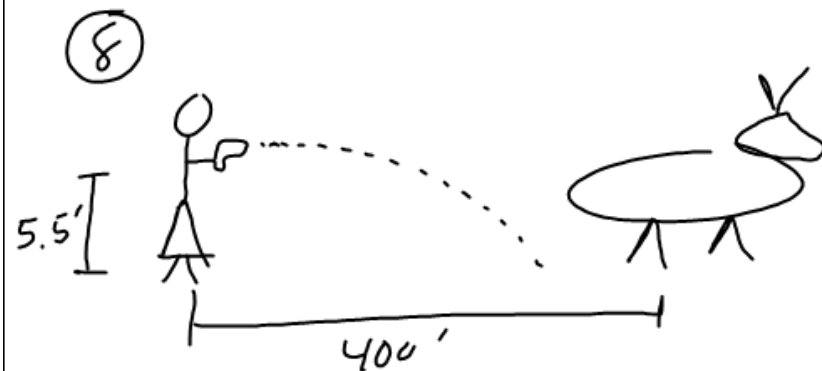
③ time ↓

$$0 = -16t^2 + 2.75$$

$$t = \sqrt{\frac{-2.75}{-16}} \approx 0.42 \text{ sec.}$$

$$X = 1.5(0.42)$$

$$X \approx 0.62 \text{ ft}$$



$$x = 650t$$

$$y = -16t^2 + 5.5$$

$$t = \sqrt{\frac{-5.5}{-16}} \approx 0.586 \text{ sec.}$$

$$x = 650(0.586)$$

$$\approx 381.1 \text{ ft}$$

⑨

$$x = 650t \rightarrow 400 = 650t$$

$$y = -16t^2 + h$$

$$t = \frac{400}{650} \approx 0.62$$

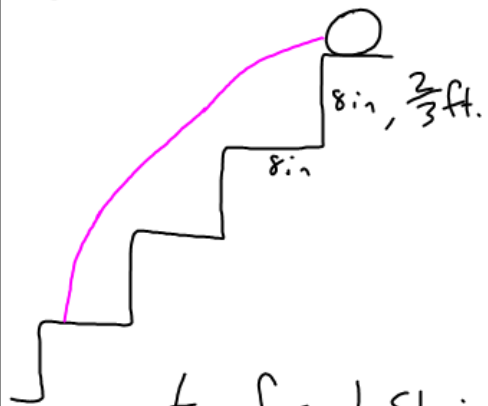
$$4 = -16t^2 + h$$

$$4 = -16(0.62)^2 + h$$

$$4 + 16(0.62)^2 = h$$

$$h \approx 10.1 \text{ feet}$$

(9)



$$x = 5t$$

$$y = -16t^2$$

$$t \text{ for 1 stair} \Rightarrow 0 = -16t^2 + \frac{2}{3}, \quad t = \sqrt{\frac{-\frac{2}{3}}{-16}} \approx 0.204 \text{ sec.}$$

$$t \text{ for 2 stairs} \Rightarrow \begin{aligned} x &= 5(0.204) \approx 1 \text{ ft} \\ 0 &= -16t^2 + \frac{4}{3} \quad t = \sqrt{\frac{-\frac{4}{3}}{-16}} \approx 0.289 \end{aligned}$$

$$t \text{ for 3 stairs} \Rightarrow \begin{aligned} x &= 5(0.289) \approx 1.44' \\ 0 &= -16t^2 + 2 \quad t = \sqrt{\frac{-2}{-16}} \approx 0.354 \end{aligned}$$

$$x = 5(0.354) \approx 1.768'$$

## 6.6 example 2

<u>Plane</u>	<u>Wind</u>	<u>Total</u>
$x = 250t \cos(\theta)$	$x = 0$	$x = -250t \cos(\theta)$
$y = 250 \sin(\theta)$	$y = -20t$	$y = 250t \sin \theta - 20t$

$$0 = 250t \sin \theta - 20t$$

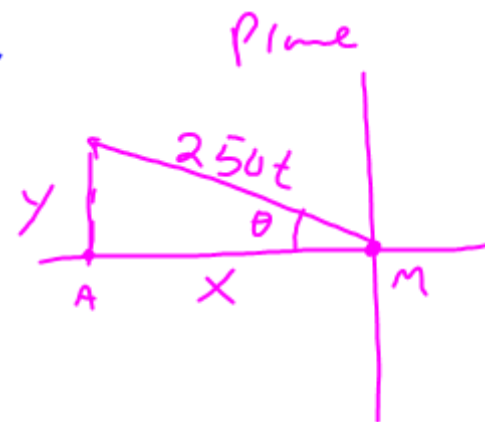
$$20\cancel{t} = 250\cancel{t} \sin(\theta)$$

$$\frac{20}{250} = \frac{250 \sin \theta}{250}$$

$$\sin \theta = \frac{20}{250}$$

$$\theta = \sin^{-1}\left(\frac{20}{250}\right)$$

$$\theta \approx 4.59^\circ$$



$$1000 = -250t \cos(4.59)$$

## Homework

- 6.6 #1, 2, 4, 6, 7a-d - tomorrow
- p. 288 is a project - do Wednesday
- Quiz tomorrow